

The development of intensive farming

World population increased from **3.2 billion** in 1963 to over **7 billion** in 2014 and is set to reach **10 billion** by 2050

World food production had to be intensified



Rising incomes and urbanisation has led to increased demand for meat and dairy

Traditional livestock farming replaced with intensive, mechanised farming systems



Fewer farms are raising more animals

Around **70%** of food animals globally (and **99%** in the US) are raised in intensive farming systems



Process originated in the US

Taken up in other Western countries and large meat producers – Brazil, China and Russia

x2

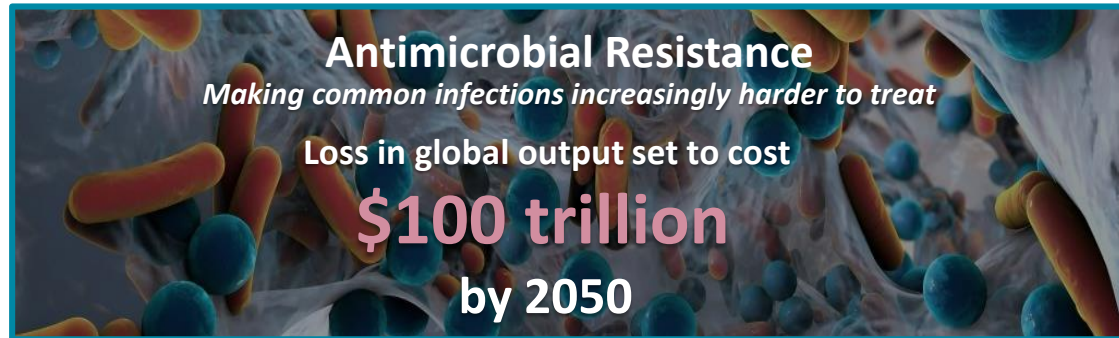
Meat production in least developed countries doubled 1992-2012

1966
7 billion
farm animals

2016
25 billion
farm animals

Health risks of intensive farming

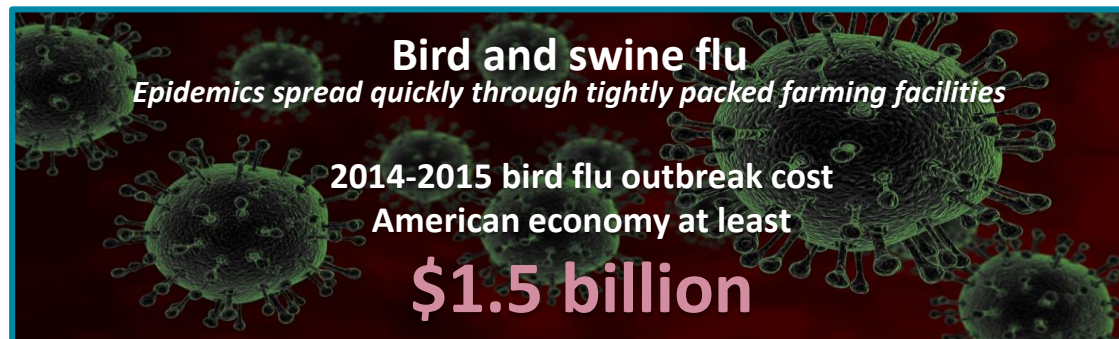
Factory farming proliferates pathogens, damages our environment and supplies a substandard food source

A graphic showing various colorful bacteria and viruses. The text is overlaid on this background.

Antimicrobial Resistance
Making common infections increasingly harder to treat
Loss in global output set to cost
\$100 trillion
by 2050

A graphic showing a dense field of red and blue virus-like particles. The text is overlaid on this background.

Chronic Disease
Meat consumption is linked to increasing rates of obesity, diabetes and cancer
Obesity annually costs the global economy
3% of GDP
Direct costs of cancer in America in 2014 cost
\$87.8 billion

A graphic showing several green, spiky virus particles on a dark red background. The text is overlaid on this background.

Bird and swine flu
Epidemics spread quickly through tightly packed farming facilities
2014-2015 bird flu outbreak cost American economy at least
\$1.5 billion

A graphic showing various blue and grey spherical and irregular shapes, representing contaminants. The text is overlaid on this background.

Environmental Contaminants
Intensive farming has consequences for the quality of our air, water and soil
Air pollution alone costs the global economy
\$225 billion
in lost labor

Antibiotics: what's the risk?

70% of all antibiotics produced globally are given to food animals

Farms routinely feed animals antibiotics to prevent disease in confined conditions

Bacteria develop resistance to antibiotics when they come into contact with them

Routine rather than case-by-case antibiotics use increases the development of antibiotic-resistant bacteria

Globally, antibiotic-resistant bugs already cause around **700,000 deaths** a year

Consumers

Consumers are increasingly concerned about antibiotics use in meat production

Policy

G20 and developing country governments have committed to act on AMR, which will include direction on farm antibiotic use

Financial

Antibiotic resistance could take **\$100 trillion** out of global economy by 2050

Positive trends in sustainable protein



Rise of flexitarianism in Western markets

Meat and dairy consumption dropped 15% between 1980-2012 in the UK

Increased consumer focus on health

39% of Americans report eating less meat than three years ago, with 66% of those citing health as a motivating concern

Increasing possibility of a meat tax

Sugar tax was initially dismissed – but became law within a few years, affecting beverage industry

Public procurement beginning to favour meat-free options

German environment ministry banned meat from official events

LA Public Schools Board piloting scheme offering vegan option at all meals

Growth of alternative protein market

Meat substitute product launches accounted for 14% of all new “meat” launches in West Europe in Q3 2015, compared to 6.3% in Q3 2011

Demand for alternative proteins set to double by 2024

Investment opportunities in alternative proteins



Dean Foods takes minority stake in Good Karma Foods, a US producer of flaxseed-based milk and yogurt alternatives



Unilever purchases Sir Kensingtons, a sustainable and dairy-free condiment company, and releases dairy-free ice creams



General Mills launches 301 Inc., a business development and venture unit to accelerate innovation in the food space



Hampton Creek produces egg-free mayo



Pret-a-Manger trials new store selling only vegetarian products; sales increased by 70%



Tyson Foods purchases 5% stake in Beyond Meat

From interest to action

Consumers

Health

WALL STREET
JOURNAL

15.19.2016

“ Saving Antibiotics So That
Antibiotics Can Save Lives ”

FORTUNE

03.03.2017

“ Why Tyson Foods is
investing in alternative
proteins ”

Polymakers

Legislation

Bloomberg

14.10.2016

“ As Deadly Superbugs Rise,
Big Pharma Presses Farm
Antibiotics ”



World Health
Organization

01.04.2017

“ Antimicrobial resistance:
translating political
commitment into national
action ”

Businesses

Revenues

Forbes

30.03.2017

“ Brazil Meat Scandal
Losses Could Reach \$5
Billion ”



26.04.2017

“ Europe's meat and dairy
farming vulnerable as
climate change worsens
water scarcity ”

Investors

Knowledge gap

Call to action

FAIRR is galvanising investor influence

Investment risk report



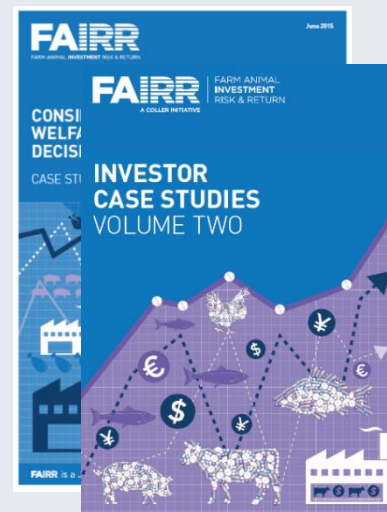
28 ESG risks

BBFAW



Transparency on
supply chains

Case studies



Practical help by investors
for investors

Issue briefings

